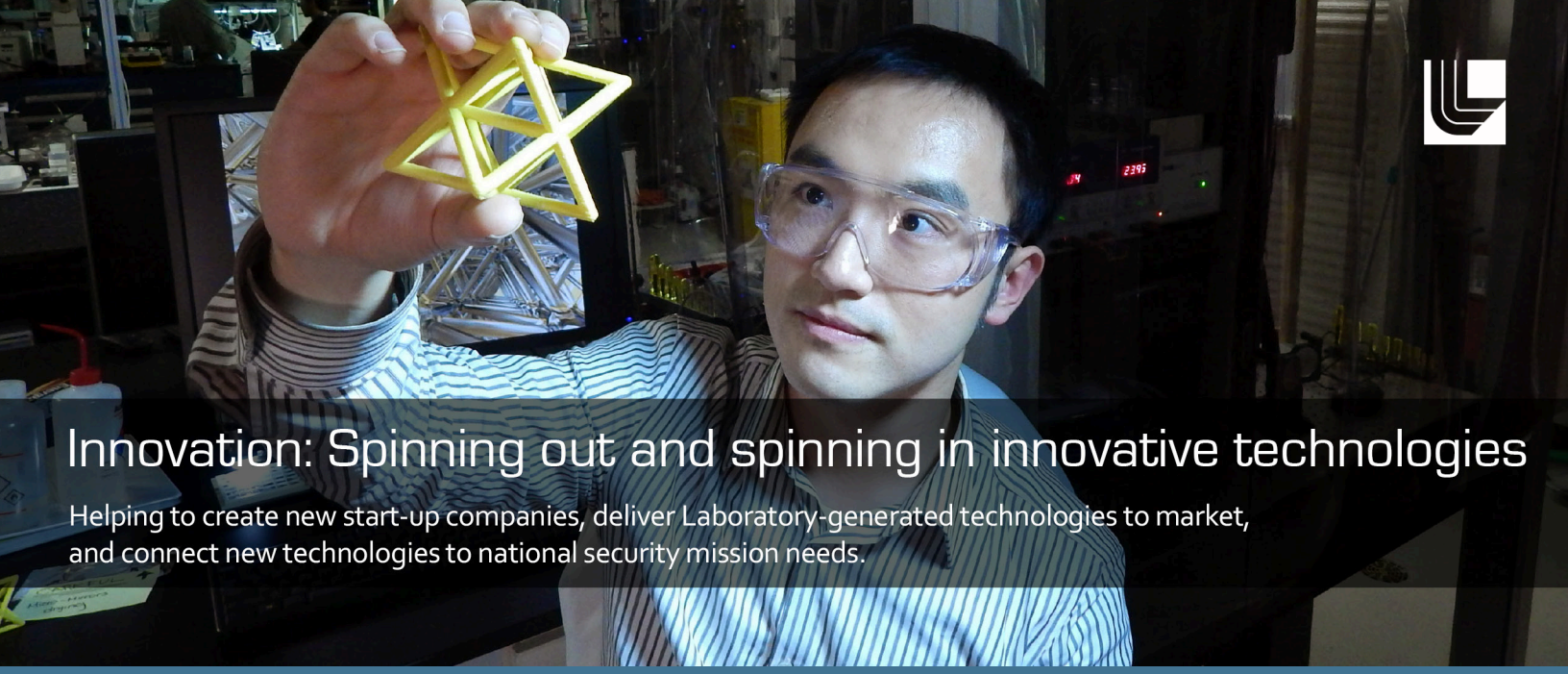


Innovation: Spinning out and spinning in innovative technologies

Helping to create new start-up companies, deliver Laboratory-generated technologies to market, and connect new technologies to national security mission needs.

Description

LLNL is located within the Tri-Valley region of the Bay Area, a new node for innovation east of the Silicon Valley. Tri-Valley start-up incubators working with vibrant new companies bring disruptive technologies to the marketplace. The Laboratory has become an active member of the greater Silicon Valley ecosystem and has increased entrepreneurial efforts in selected areas.

LLNL is also working to foster and expand its connections with Silicon Valley businesses and beyond through development of the Livermore Valley Open Campus (LVOC), in partnership with Sandia National Laboratories. These efforts help to strengthen the nation's economic competitiveness and develop the local economy.

Significance

LLNL has a rich history of delivering groundbreaking technologies that fulfill its national security missions and turning these technologies into commercial relationships. Innovation increasingly determines technological and economic leadership, and LLNL has seized on strengthening our relationships with business and industry to more efficiently integrate our technologies within the marketplace.

Accomplishments

- The High Performance Computing Innovation Center (HPCIC), launched in 2011, is expanding collaborations that advance innovation in hardware and predictive simulation capabilities.
- LLNL employees and LLNL industrial partnerships have enormous economic impact on the local community and on a global scale. For example, four companies started by LLNL scientists have a combined market cap of over $12.5B.
- Since 1978, LLNL has captured an impressive 152 R&D 100 Awards. Often called the "Oscars of Invention," R&D 100 Awards are a mark of excellence known to industry, government, and academia as evidence of the highest level of innovation.
- LLNL highly values and encourages accomplishments in developing intellectual property and transferring it to market. As a way of promoting commercial investment, LLNL has created an Entrepreneurs' Hall of Fame to recognize current or former employees who have made major contributions to the U.S. economy through inventiveness and entrepreneurial work with the private sector.
- The Laboratory has won more than 20 awards in the past five years from the Federal Laboratory Consortium for technology transfer. These awards recognize the work of scientific innovation as well as the work of technology transfer professionals that push research into the private sector.

The Future

LVOC is modeled after research and development campuses found at major industrial research parks with college-campus-like security that provides open, inviting access. Its major focus is on providing a portal with LLNL that spawns and accelerates collaborations and partnerships with industry; academia; and federal, state, and local agencies.

LLNL's Industrial Partnerships Office bridges the gap between businesses and national lab innovators. We instituted new programs to teach would-be entrepreneurs, developed a new entrepreneurial leave policy, and established a presence in the Silicon Valley at the NASA Ames campus. In collaboration, NASA Ames will have an office in LVOC to encourage and facilitate the growing relationship between the two organizations.

LLNL Entrepreneurs' Hall of Fame

Here is a selection of 4 of the 19 LLNL Entrepreneurs' Hall of Fame inductees.

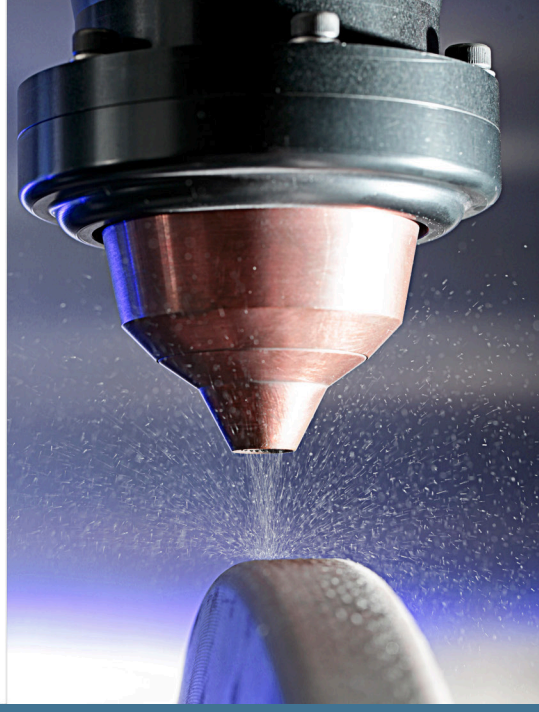
Walter Scott
for founding Digital Globe, the first commercial satellite imaging company

John Hallquist
for developing the DYNA3D finite element code

Thomas McEwan
for inventing micro-impulse radar

Joe W. Gray and Daniel Pinkel
for co-inventing chromosome painting

Martin Casado
for his developments in network security and software-defined networking (SDN)



Scientific Underpinning for Creating Partnerships

In order to meet LLNL's missions in national security, our scientists and engineers are applying their knowledge and expertise across a number of areas from high-energy-density and laser physics, high-performance computing, chemistry, biosciences, and clean energy. Many of the technologies developed for mission-driven challenges have applications beyond the Lab's mission.

The Livermore Valley Open Campus (LVOC) leverages these technologies and—through LLNL's Industrial Partnership Office— reaches out to industry with the goal of identifying and leveraging new economic opportunities where we can best collaborate on moving these technologies into the private sector.

As an example, the High Performance Computing Innovation Center housed in LVOC, facilitates strategic engagements with companies wishing to benefit from LLNL's long-standing expertise in high-performance computing and computational science and engineering.

Future HPCIC complex in the LVOC.

Challenges

- The process for obtaining approval and creating the necessary infrastructure for LVOC is proving to be quite challenging.
- Issues with transaction times, contract terms, and measures of success are sometimes an impediment to industry–laboratory partnerships.
- After years of being behind a security fence, it is a communications challenge to engage with the business community and convince them that LLNL has a new focus on partnering with industry and academia.
- Working in a vibrant region of entrepreneurs and start-up companies with extraordinary capabilities can have unintended and undesirable consequences for workforce attraction and retention.

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